OCCUPATIONAL ANALYSES SERIES

Carpenter

2005

Human Resources and Skills Development Canada
Ressources humaines et Développement des compétences Canada

Canada

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Occupational Analyses Series

Carpenter

2005

Trades and Apprenticeship Division

Human Resources
Partnerships Directorate

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The Canadian Council of Directors of Apprenticeship (CCDA) recognizes this Occupational Analysis as the national standard for the occupation of Carpenter.

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OTHER RELATED OCCUPATIONAL TITLES

This analysis covers tasks performed by carpenters whose occupational title has been identified by some provinces and territories of Canada under the following names:

- Carpenter - Joiner
- General Carpenter

LIST OF RED SEAL NATIONAL OCCUPATIONAL ANALYSES

TITLE	NOC* Code
Appliance Service Technician (2005)	7332
Automotive Painter (2005)	7322
Automotive Service Technician (2005)	7321
Baker (1997)	6252
Boilermaker (2003)	7262
Bricklayer (2000)	7281
Cabinetmaker (2000)	7272
Carpenter (2005)	7271
Concrete Finisher (1995)	7282
Construction Electrician (2003)	7241
Cook (2003)	6242
Electrical Rewind Mechanic (1999)	7333
Electronics Technician – Consumer Products (1997)	2242
Farm Equipment Mechanic (2000)	7312
Floorcovering Installer (2005)	7295
Glazier (2004)	7292
Hairstylist (2005)	6271
Heavy Duty Equipment Technician (2004)	7312
Industrial Electrician (2003)	7242
Industrial Instrument Mechanic (2000)	2243
Industrial Mechanic (Millwright) (1999)	7311
Insulator (Heat and Frost) (2000)	7293
Ironworker (Generalist) (1993)	7264
Lather (Interior Systems Mechanic) (2002)	7284
Machinist (2005)	7231
Metal Fabricator (Fitter) (2003)	7263

Mobile Crane Operator (1997)	7371
Motorcycle Mechanic (1995)	7334
Motor Vehicle Body Repairer (Metal and Paint) (2005)	7322
Oil Burner Mechanic (1997)	7331
Painter and Decorator (2000)	7294
Partsperson (2005)	1472
Plumber (2003)	7251
Powerline Technician (2004)	7244
Recreation Vehicle Mechanic (2000)	7383
Refrigeration and Air Conditioning Mechanic (2004)	7313
Roofer (1997)	7291
Sheet Metal Worker (1997)	7261
Sprinkler System Installer (2003)	7252
Steamfitter – Pipefitter (1996)	7252
Tilesetter (2004)	7283
Tool and Die Maker (2005)	7232
Transport Trailer Technician (2003)	7321
Truck and Transport Mechanic (2000)	7321
Welder (2004)	7265

* National Occupational Classification

Requests for these publications should be forwarded to:

Trades and Apprenticeship Division
Human Resources Partnerships
Human Resources and Skills Development Canada
140 Promenade du Portage, Phase IV, 5th Floor
Gatineau, Quebec K1A 0J9

These publications are also available to order or download online at: **www.red-seal.ca**.

A comparative listing of apprenticeship training programs across Canada may be accessed at **www.ellischart.ca**. The Ellis Chart also lists the current provincial and territorial trade names.

FOREWORD

The first National Conference on Apprenticeship in Trades and Industries, held in Ottawa in 1952, recommended that the federal government be requested to co-operate with provincial and territorial apprenticeship committees and officials in preparing analyses of a number of skilled occupations. To this end, Human Resources and Skills Development Canada (HRSDC) sponsors a program, under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA), to develop a series of occupational analyses.

The Occupational Analysis Program has the following objectives:

- to identify and group the tasks performed by skilled workers in particular occupations;
- to identify those tasks that are performed by skilled workers in every province and territory;
- to develop instruments for use in the preparation of Interprovincial Standards "Red Seal" Examinations and curricula for training leading to the certification of skilled workers;
- to facilitate the mobility, in Canada, of apprentices and skilled workers;
- to supply employers and employees, and their associations, industries, training institutions and governments with analyses of the tasks performed in particular occupations.

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GUIDE TO ANALYSIS

DEVELOPMENT OF ANALYSIS

A draft analysis is developed by a committee of industry experts in the field led by a team of facilitators. This draft analysis identifies all the tasks performed in the occupation.

The draft is translated and reviewed by the NOA Team of HRSDC. A copy of this analysis is then forwarded to provincial/territorial authorities for review by specialists in the field. Their recommendations are assessed and incorporated into the final draft.

The occupational analysis is published in both official languages.

STRUCTURE OF ANALYSIS

To facilitate understanding of the nature of the occupation, the work performed is divided into the following divisions:

BLOCK – is the largest division within the analysis and reflects a distinct operation relevant to the occupation.

TASK – is the distinct activity that, combined with others, makes up the logical and necessary steps the worker is required to perform to complete a specific assignment within a "BLOCK".

SUB-TASK – is the smallest division into which it is practical to subdivide any work activity and, combined with others, fully describes all duties constituting a "TASK".

Supporting Knowledge & Abilities

The elements of skill and knowledge that an individual must acquire to adequately perform the sub-task.

Trends

Any shifts or changes in technology that affect the block.

Related Components

All components related to a specified task being undertaken by a carpenter.

Tools and Equipment

All tools and equipment necessary for the carpenter to perform the work on all given tasks identified within the block.

VALIDATION METHOD

At the request of the Canadian Council of Directors of Apprenticeship (CCDA), the Standardization Sub-committee developed a method for validating the Red Seal National Occupational Analyses.

A draft of the analysis is sent to all jurisdictions for validation. Each jurisdiction rates the sub-tasks and applies percentage ratings to blocks and tasks. This method for the validation of the National Occupational Analysis identifies common core tasks across Canada for a specific occupation. This feature facilitates the weighting of the Interprovincial Standards "Red Seal" Examinations.

DEFINITIONS

YES: the sub-task is performed by workers in the occupation in a specific jurisdiction.

NO: the sub-task is not performed by workers in the occupation in a specific jurisdiction.

BLOCK %: the average number of questions (items), derived from the collective decision made by workers within the occupation from all areas of Canada, that will be placed on an interprovincial examination to assess each block of the analysis.

TASK %: the average number of questions (items), derived from the collective decision made by workers within the occupation from all areas of Canada, that will be placed on an interprovincial examination to assess each task of the analysis.

NV: Not Validated by a province/territory.

ND: Not Designated in a province/territory.

PROVINCIAL/TERRITORIAL ABBREVIATIONS

NL: Newfoundland and Labrador
NS: Nova Scotia
PE: Prince Edward Island
NB: New Brunswick
QC: Quebec
ON: Ontario
MB: Manitoba
SK: Saskatchewan
AB: Alberta
BC: British Columbia
NT: Northwest Territories
YT: Yukon
NU: Nunavut

COMMON CORE

The criteria for determining common core depend on the performance of sub-tasks. If at least 70% of the responding jurisdictions (excluding NVs and NDs) perform a sub-task, it shall be considered common core.

Interprovincial Standards "Red Seal" Examinations are based on the common core identified through this validation process. Validation identifies what will be assessed through the interprovincial examination.

BLOCK AND TASK WEIGHTING (APPENDIX C)

This appendix represents the block and task percentages as submitted by each jurisdiction.

Each jurisdiction, with the use of a provincial/territorial occupational advisory committee, validates the content, places percentages on blocks and tasks, and indicates whether or not the sub-tasks are performed by the skilled workers within the occupation. The results of this exercise are submitted to the NOA Team who then analyzes the data and develops this appendix which provides the individual jurisdictional validation results as well as the national averages of all responses.

PIE CHART (APPENDIX D)

The graph depicts the national percentages assigned to blocks in the analysis.

SCOPE OF THE CARPENTER OCCUPATION

A carpenter is a tradesperson who possesses the full range of knowledge and abilities required to construct, renovate and repair institutional, commercial, industrial (I.C.I.) and residential structures made of wood, steel, concrete and other materials.

They can work for a wide array of employers, including construction firms, building owners and users, building developers and government departments. A significant number of carpenters are union members or may be self-employed.

While the scope of the carpenter trade includes many aspects of building construction, a growing number of carpenters work primarily in one area of specialization within the trade, such as concrete forming, framing, finishing, interior systems and scaffolding. Carpenters are employed in a variety of job environments, including houses under construction and renovations, plants that pre-fabricate buildings, residential or commercial sites and industrial sites. They may work in a variety of weather conditions. Many carpenters routinely work overtime in peak periods or according to the needs of each project.

Safety is of prime importance to all carpenters. There is some risk of injury resulting from slips and falls, falling objects and the use of hand and power tools. The proper use of personal protective equipment is very important to carpenters regardless of their location of work.

Though not described in this analysis as knowledge or abilities, some important competencies of the carpenter are: good knowledge of mathematics, the ability to use metric and imperial measurements, an understanding of building science, communication skills, problem solving skills and the ability to work independently or as part of a team. Other skills present in a competent carpenter are: the ability to work at heights, the ability to stand or kneel for long periods of time, manual dexterity and good balance. Carpentry is a physically demanding occupation requiring the lifting of heavy tools and materials. As carpentry is primarily a work-based training trade, mentoring of apprentices and workers is a skill required to ensure capable completion of duties and quality workmanship.

This analysis recognizes similarities or overlaps in the work of other tradespersons such as roofers, lathers (interior systems mechanic), floorcovering installers, concrete finishers and cabinetmakers. Experienced carpenters may advance to foreman and construction superintendent or may become contractors. Carpenters are involved in every step of building construction, which is an advantage when applying for supervisory positions.

OCCUPATIONAL OBSERVATIONS

Tools

There is an expansion in the use of pneumatic, fastening and cordless tools. Many fastening tools are now gas-powered. Cordless tools continue to become more powerful and are being used by more and more carpenters. Specialty tools are allowing carpenters to improve quality and complete work faster. Advanced dust collection equipment and portable vacuum systems attached to tools are becoming more common. Laser alignment equipment has become economical and more 'user-friendly', resulting in increased use among carpenters. Layout equipment such as 'total station' is being used more readily. 'Total station' includes the use of computerized theodolites, GPS and the interfacing with AutoCad.

Materials

Insulated concrete foundations (ICF) are being introduced to the construction of commercial and residential buildings. There is an increased use of steel stud framing in residential construction. Steel stud systems are being used for structural and non-structural applications. There has been an introduction of new chemicals for preserving wood in Preserved Wood Foundations (PWF). New materials are being introduced for exterior finishes, including acrylic and breathable stucco (Exterior Insulation Finishing Systems – EIFS) and concrete fiberboard siding. There continues to be an increased use of engineered wood products and composite materials such as Fiberglass Reinforced Panels (FRP) and Fibreglass Reinforcing Bars.

Processes

There is more emphasis on energy efficient housing construction, including R2000 homes. This results in an increased need for mechanical ventilation. The use of improved methods of climate protection and heating has resulted in fewer shutdowns over the winter months. Environmental awareness, cost effectiveness and waste control are issues at the forefront of establishing new construction methods in the industry. Recycling of building materials and products is a clear example of these new directions. Basic computer skills are becoming a useful occupational skill for career advancement. Quality control systems are becoming more commonplace in the construction industry.

Safety

There are increased regulations regarding fall protection, scaffold erection and inspection, and breathing and hearing protection. Larger employers may have their own safety officers to provide training and monitoring. Construction organizations are making safety training more accessible.

SAFETY

Safe working procedures and conditions, accident prevention and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers and employees. It is imperative that all parties are aware of circumstances and conditions that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to accidents or injury.

It is generally recognized that a safety-conscious attitude and work practices contribute to a healthy, safe and accident-free working environment.

It is imperative to apply and be familiar with the Occupational Health and Safety Acts and Workplace Hazardous Material Information System (WHMIS) Regulations. As well, it is essential to determine workplace hazards and take measures to protect oneself, co-workers, the public and the environment.

As safety education is an integral part of training in all jurisdictions, personal safety practices are not recorded in this document. However, the technical safety aspect relating to each task and sub-task are included throughout this analysis.

ANALYSIS

BLOCK A

OCCUPATIONAL SKILLS

Trends: *New methods, tools and materials are being introduced into the occupation on an ongoing basis. Increased emphasis on health and safety in the workplace. Introduction of a new concept: 'green building' which includes the use of recycled material and environmentally friendly products.*

Task 1 Uses tools and equipment.

Related Components: All components of the trade.

Tools and Equipment: See Appendix A.

Sub-task

1.01 Uses hand tools.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.01.01	knowledge of boring tools
1.01.02	knowledge of hand cutting tools
1.01.03	knowledge of abrading and planing tools
1.01.04	knowledge of assembly and dismantling tools
1.01.05	knowledge of measuring tools
1.01.06	knowledge of layout and alignment tools
1.01.07	knowledge of squaring and marking tools
1.01.08	knowledge of clamping tools
1.01.09	ability to select and operate hand tools
1.01.10	ability to maintain and store hand tools

Sub-task

1.02 Uses portable power tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.02.01	knowledge of types of portable power tools such as electric, battery powered and gas powered
1.02.02	knowledge of manufacturers' specifications
1.02.03	ability to select and operate portable power tools
1.02.04	ability to maintain and store portable power tools
1.02.05	ability to recognize hazards such as worn power cords and dull blades

Sub-task

1.03 Uses stationary power tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.03.01	knowledge of types of stationary power tools such as table saws, planers and jointers
1.03.02	knowledge of manufacturers' specifications
1.03.03	ability to recognize hazards
1.03.04	ability to select and operate stationary power tools
1.03.05	ability to maintain stationary power tools

Sub-task

1.04 Uses powder actuated tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.04.01	knowledge of types of powder actuated tools
1.04.02	knowledge of types of shots
1.04.03	knowledge of operating procedures
1.04.04	knowledge of manufacturers' specifications
1.04.05	knowledge of licensing and training requirements
1.04.06	ability to select and operate powder actuated tools
1.04.07	ability to select shots
1.04.08	ability to recognize hazards of use
1.04.09	ability to recognize unsafe powder actuated tools
1.04.10	ability to dispose of misfired shots
1.04.11	ability to maintain and store powder actuated tools

Sub-task

1.05 Uses pneumatic tools. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.05.01	knowledge of types of pneumatic tools
1.05.02	knowledge of types of fasteners
1.05.03	knowledge of safety precautions and hazards
1.05.04	knowledge of manufacturers' specifications

1.05.05	ability to select and operate pneumatic tools
1.05.06	ability to select fasteners
1.05.07	ability to recognize unsafe pneumatic tools
1.05.08	ability to maintain and store pneumatic tools

Sub-task

1.06 Uses rigging and hoisting equipment.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.06.01	knowledge of types of rigging and hoisting equipment
1.06.02	knowledge of components of rigging and hoisting equipment
1.06.03	knowledge of safe rigging and hoisting practices such as load weight calculations, working load limits and sling angles
1.06.04	knowledge of knots and hitches
1.06.05	ability to select and operate rigging and hoisting equipment
1.06.06	ability to inspect rigging and hoisting equipment
1.06.07	ability to identify and report unsafe rigging and hoisting equipment
1.06.08	ability to connect rigging equipment
1.06.09	ability to use hand signals and communication devices
1.06.10	ability to maintain and store rigging and hoisting equipment

Sub-task

1.07 Uses layout instruments. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.07.01	knowledge of types of layout instruments such as theodolites, transits, laser levels and builder's levels
1.07.02	knowledge of basic survey theory and terminology
1.07.03	ability to select layout instruments
1.07.04	ability to set up and adjust layout instruments and check for level accuracy
1.07.05	ability to determine elevations and angles
1.07.06	ability to apply calculations
1.07.07	ability to maintain and store layout instruments

Sub-task

1.08 Uses tack welding equipment. **Supporting Knowledge & Abilities**

(NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	no	yes	yes	no	no	no	no	no	no	NV

1.08.01	knowledge of tack welding
1.08.02	knowledge of safe welding practices
1.08.03	knowledge of licensing and training requirements
1.08.04	ability to select and operate tack welding equipment

1.08.05	ability to identify unsafe tack welding equipment
1.08.06	ability to maintain and store tack welding equipment

Sub-task

1.09 Uses torch cutting equipment. **Supporting Knowledge & Abilities**

(NOT COMMON CORE)

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	no	yes	yes	yes	yes	no	no	no	no	NV

1.09.01	knowledge of torch cutting techniques
1.09.02	knowledge of safe torch cutting practices
1.09.03	knowledge of licensing and training requirements
1.09.04	ability to select and operate torch cutting equipment
1.09.05	ability to identify unsafe torch cutting equipment
1.09.06	ability to maintain and store torch cutting equipment

Sub-task

1.10 Uses personal protective equipment (PPE). **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

1.10.01	knowledge of types of PPE such as hard hats, eye protection, respiratory protection and hearing protection
1.10.02	knowledge of manufacturers' specifications

1.10.03	knowledge of PPE operations
1.10.04	knowledge of training requirements
1.10.05	ability to select, wear and adjust PPE
1.10.06	ability to select and use fall protection equipment
1.10.07	ability to inspect, maintain and store PPE

Task 2 Uses building materials.

Related Components: Fasteners (screws, nails, bolts, staples, anchors, shear plates, rivets, adhesives, joist hangers, timber frame connectors, post-beam connectors, gang plates, stair bolts);

Membranes (rubber, asphalt, bituminous, plastic, air/weather and vapour barrier, concrete sealant, chemical sealant);

Materials (wood, concrete, metal, masonry, composite, plastic, glass, ceramic, engineered wood, fibreglass, polystyrene, gypsum);

Rigging accessories (block and tackle, ropes, banding, shrink wrap);

Foundation coatings, drainage systems, frost protection, insect protection;

Insulation (loose fill, batt, reflective, flexible, rigid, protective, expanding foam, acoustical, radiation);

Grouts (non-shrink, hydraulic), grouting additives.

Tools and Equipment: Standard tool kit, standard safety equipment, precision tool kit, hammer drill, drill screw gun, pneumatic tools, powder actuated tools, impact wrenches, brushes, rollers, torches, sprayers, trowels, moisture meter, dollies, pallet jacks, rigging and hoisting equipment, bander, ropes, forklift, boom truck.

Sub-task

2.01 Selects materials.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

2.01.01	knowledge of material properties such as composition, moisture content, sizing, strength and grain
2.01.02	knowledge of building codes
2.01.03	knowledge of material applications
2.01.04	ability to assess condition, quality or grade of materials

Sub-task

2.02 Handles materials.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

2.02.01	knowledge of handling and storage procedures
2.02.02	knowledge of acclimatization requirements of materials
2.02.03	knowledge of WHMIS and MSDS
2.02.04	ability to store building materials
2.02.05	ability to store hazardous materials such as glues and solvents

Sub-task

2.03 Installs fasteners, adhesives and connectors.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

2.03.01	knowledge of types of fasteners, adhesives and connectors
2.03.02	knowledge of structural materials such as wood, concrete, metals and masonry
2.03.03	knowledge of non-structural materials such as insulation, plastic and gypsum
2.03.04	ability to select and place fasteners, adhesives and connectors
2.03.05	ability to determine location of installation such as anchors in masonry blocks

Sub-task

2.04 Installs membranes and sealants.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

2.04.01	knowledge of types of membranes such as air/weather barriers, vapour barriers, waterproofing barriers and damp-proofing barriers
2.04.02	knowledge of types of sealants such as acoustic, silicone and expanding foam
2.04.03	knowledge of air and vapour flow
2.04.04	knowledge of moisture-related problems
2.04.05	knowledge of building science principles

2.04.06	ability to select and place air/weather barriers, vapour barriers, gas and smoke barriers and fire stops
2.04.07	ability to select and apply damp-proofing and drainage
2.04.08	ability to select and place gaskets

Sub-task

2.05 Installs foundation protection. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	NV

2.05.01	knowledge of various types of foundation protection
2.05.02	knowledge of soils and backfill procedures
2.05.03	knowledge of drainage principles
2.05.04	knowledge of insect damage prevention
2.05.05	knowledge of parging
2.05.06	ability to install foundation drainage systems
2.05.07	ability to install foundation damp-proofing
2.05.08	ability to install backfill protection
2.05.09	ability to install construction joints
2.05.10	ability to install foundation insulation

Sub-task

2.06 Installs insulating materials. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	NV

2.06.01	knowledge of types of insulating materials

2.06.02	knowledge of energy codes
2.06.03	knowledge of building science principles
2.06.04	knowledge of safety procedures when installing insulating materials
2.06.05	ability to select and install thermal and acoustical insulation

Task 3 Interprets documentation.

Related Components: National Building Code, blueprints, specifications, health and safety regulations, WHMIS documentation, site instructions, change orders, building permits, national energy codes, inspection reports, municipal codes, shop drawings, Canadian Standards Association (CSA) documentation.

Tools and Equipment: Drawing instruments, scale rulers, calculator, computer, personal digital assistant (PDA), communication equipment.

Sub-task

3.01 Interprets blueprints. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.01.01	knowledge of types of drawings such as site, architectural, structural and mechanical
3.01.02	knowledge of drawing components such as lines, symbols, legends and schedules
3.01.03	knowledge of specifications
3.01.04	ability to use drawing instruments such as protractors and scale rulers
3.01.05	ability to scale imperial and metric measurements

Sub-task

3.02 Interprets specifications.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.02.01	knowledge of types of specification tables
3.02.02	knowledge of sections of specification tables
3.02.03	ability to use manufacturers' documentation
3.02.04	ability to use shop drawings
3.02.05	ability to read schedules, lists and plans

Sub-task

3.03 Applies building codes.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.03.01	knowledge of National Building Code
3.03.02	knowledge of provincial, territorial and municipal codes
3.03.03	ability to remain current with codes
3.03.04	ability to search and identify topics within building codes

Sub-task

3.04 Interprets safety and workplace documentation.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

3.04.01	knowledge of safety documentation such as MSDS, WHMIS symbols and safety manuals

3.04.02	knowledge of health and safety regulations
3.04.03	knowledge of workplace documentation such as site instructions, change orders and building permits
3.04.04	ability to remain current with safety and workplace documentation
3.04.05	ability to locate and identify safety and workplace documentation

Task 4 Organizes work.

Related Components: Work schedules, health and safety regulations, inspections, hand signal documents, blueprints, workplace safety and health plan, workplace records, hoarding, guard rails, construction shack, temporary shelters and furniture, temporary toilet facilities, signage, temporary safety protection, temporary fencing, survey markers.

Tools and Equipment: Standard tool kit, standard safety equipment, communication equipment, calculator, levels, theodolites, plumb bobs, batter boards, string lines, heating equipment, drawing instruments.

Sub-task

4.01 Performs site layout.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.01.01	knowledge of basic geometry
4.01.02	knowledge of basic survey theory
4.01.03	knowledge of local regulations such as property line setbacks and height restrictions
4.01.04	ability to interpret blueprints
4.01.05	ability to operate layout instruments such as levels, theodolites, plumb bobs and laser equipment
4.01.06	ability to use layout structures such as batter boards and string lines

4.01.07	ability to locate survey markers
4.01.08	ability to determine elevations
4.01.09	ability to determine offsets and angles

Sub-task

4.02 **Estimates materials.**

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.02.01	knowledge of types of materials
4.02.02	ability to interpret blueprints
4.02.03	ability to perform calculations such as area and volume
4.02.04	ability to perform quantity calculations

Sub-task

4.03 **Communicates with others.**

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.03.01	knowledge of methods of communication such as verbal, written and electronic
4.03.02	ability to translate technical information into common language
4.03.03	ability to complete work-related records
4.03.04	ability to communicate with clients and consultants
4.03.05	ability to communicate with supervisors

4.03.06	ability to communicate with other tradespersons
4.03.07	ability to consult with authorities having jurisdiction such as building inspectors and safety officers
4.03.08	ability to coach apprentices
4.03.09	ability to operate communication equipment such as cell phones, two-way radios and computers
4.03.10	ability to use hand signals
4.03.11	ability to draw a sketch

Sub-task

4.04 Schedules work sequence. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.04.01	knowledge of task requirements
4.04.02	knowledge of requirements of other trades
4.04.03	knowledge of project material delivery sequence
4.04.04	ability to record sequence of project
4.04.05	ability to coordinate delivery of materials
4.04.06	ability to coordinate with other tradespersons
4.04.07	ability to estimate time to complete tasks

Sub-task

4.05 Maintains safe work environment.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Supporting Knowledge & Abilities

4.05.01	knowledge of federal, provincial and municipal health and safety acts and regulations
4.05.02	knowledge of safety manuals and procedures
4.05.03	knowledge of training requirements
4.05.04	knowledge of location of first aid supplies
4.05.05	knowledge of confined space practices
4.05.06	ability to use safety equipment and structures such as barriers
4.05.07	ability to install temporary safety protection
4.05.08	ability to install temporary heating, environmental protection and safety hoarding
4.05.09	ability to construct and install temporary shelters
4.05.10	ability to install temporary lighting
4.05.11	ability to employ safety procedures applicable to roof access and fall protection
4.05.12	ability to identify and report hazards
4.05.13	ability to apply WHMIS procedures
4.05.14	ability to access regulations
4.05.15	ability to remain current with regulations

Sub-task

4.06 Performs site preparation. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

4.06.01	knowledge of how site work impacts environment
4.06.02	knowledge of health and safety acts and regulations
4.06.03	knowledge of methods of locating underground utilities
4.06.04	knowledge of excavation techniques
4.06.05	knowledge of site conditions such as soil types, water problems and shoring requirements
4.06.06	ability to install temporary structures such as signage, furniture, guard rails and construction shack
4.06.07	ability to plan access and egress on job site
4.06.08	ability to coordinate delivery of materials
4.06.09	ability to plan for storage of building materials

Task 5 Constructs temporary access structures.

Related Components: Wood scaffolds (single pole, double pole, trestle), system scaffolds, frame scaffolds, tube and clamp scaffolds, means of access (ladders, ramps, temporary stairs), pump-jack scaffolds, suspended access systems, ladder jacks, wall brackets, roof brackets, form brackets, tagging systems, tie ins, outriggers, bracing, mud sills, guard rail systems, rigging, hoisting.

Tools and Equipment: Standard tool kit, standard safety equipment, circular saw, levelling instruments, layout instruments, shovels, hammer drill.

Sub-task

5.01 Installs scaffolding.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

5.01.01	knowledge of types of scaffold systems
5.01.02	knowledge of applicable standards, regulations and specifications
5.01.03	knowledge of effects of site conditions on scaffold such as uneven and soft ground
5.01.04	ability to select types of scaffold systems and components
5.01.05	ability to erect and dismantle stationary scaffolding
5.01.06	ability to erect and dismantle rolling scaffolding
5.01.07	ability to erect and dismantle stages and bleachers
5.01.08	ability to erect and dismantle suspended scaffold systems
5.01.09	ability to use fall protection when working with scaffolding equipment
5.01.10	ability to identify tagging systems such as red, yellow and green
5.01.11	ability to inspect and maintain scaffold systems

Sub-task

5.02 Builds ladders, ramps and temporary stairs.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Supporting Knowledge & Abilities

5.02.01	knowledge of types of ladders, ramps and temporary stairs
5.02.02	knowledge of applicable standards, regulations and specifications
5.02.03	ability to construct, install and secure site ladders, ramps and temporary stairs
5.02.04	ability to inspect and maintain ladders, ramps and temporary stairs

BLOCK B

CONCRETE

Trends: *Increased use of insulated concrete foundations (ICF). Continued scientific advances in processing of concrete.*

Task 6 Constructs formwork.

Related Components: Strip footings, pier footings, column footings, battered footings, step footings, steel forms, fibre forms, wood forms, tilt-up forms, pan forms, pre-fabricated forms, gang forms, fly forms, core forms, built-in-place forms, insulated concrete foundations (ICF), slip forms, non-slip stair inserts, void forms, anchor bolts, dowels, angle irons, plates, form ties, reinforcing steel rods, welded wired mesh (WWM), miscellaneous inserts, chases, coil ties, snap ties, water stops, keyways, strong backs, taper ties, capitals, caissons, control joints, bracing, rough bucks, bulkheads, rustication strips, chamfer strips, shoring, false work, wire mesh, threaded rod, pencil rod, buttons, connectors, floor slabs, walls, slabs-on-grade, suspended slabs, grade beams.

Tools and Equipment: Standard tool kit, standard safety equipment, pry bars, sledge hammer, circular saw, fastening devices, nail pullers, sprayers, scrapers, jack hammer, electric chipping hammer, chain saw, reciprocating saw, hammer drill, concrete bits, powder actuated tools, generator, rigging equipment, levelling instruments, wood boring bits, hydraulic jacks, socket set, come-alongs, impact wrench.

Sub-task

6.01 Erects shoring. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.01.01	knowledge of types and components of shoring
6.01.02	knowledge of shoring techniques
6.01.03	ability to determine shoring requirements
6.01.04	ability to select and place shoring
6.01.05	ability to construct and install shoring formwork for suspended slab
6.01.06	ability to re-shore

Sub-task

6.02 Constructs footing forms.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.02.01	knowledge of types of footing forms
6.02.02	knowledge of scribing techniques
6.02.03	ability to place, align and brace formwork
6.02.04	ability to establish finish elevation
6.02.05	ability to install required components such as keyways, water stops, bulkheads and miscellaneous inserts

Sub-task

6.03 Constructs wall and grade beam formwork.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.03.01	knowledge of types of piles such as steel, wood and concrete
6.03.02	knowledge of formwork material such as wood, steel, aluminium and foam
6.03.03	knowledge of wall form systems such as slip forms, gang forms, insulated concrete foundations (ICF) and tilt-up formwork
6.03.04	knowledge of form release agents
6.03.05	knowledge of tie systems
6.03.06	knowledge of voids under grade beams
6.03.07	ability to install pre-fabricated wall panels

6.03.08	ability to install built-in-place formwork
6.03.09	ability to align, plumb and brace formwork
6.03.10	ability to establish finish elevation
6.03.11	ability to install block outs such as sleeves, bucks and chases
6.03.12	ability to install components such as keyways, bulkheads, water stops and chamfer strips

Sub-task

6.04 Constructs slab formwork. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.04.01	knowledge of types of slab formwork
6.04.02	knowledge of nailing requirements
6.04.03	knowledge of manufacturers' specifications
6.04.04	ability to establish elevation
6.04.05	ability to install slab formwork
6.04.06	ability to brace, plumb and align formwork
6.04.07	ability to establish finish elevation
6.04.08	ability to install components such as keyways, bulkheads, water stops and miscellaneous inserts
6.04.09	ability to align and install falsework

Sub-task

6.05 Constructs column formwork. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.05.01	knowledge of types of forms such as fibre tube, steel, composite and wood
6.05.02	knowledge of capitals, piers and corbels
6.05.03	knowledge of tie systems
6.05.04	knowledge of yoking (collaring)
6.05.05	ability to establish location
6.05.06	ability to install column formwork
6.05.07	ability to align, plumb and brace formwork
6.05.08	ability to establish finish elevation
6.05.09	ability to install components such as chamfer strips and miscellaneous inserts

Sub-task

6.06 Constructs stair formwork. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.06.01	knowledge of types of stair and landing forms
6.06.02	knowledge of forming techniques such as using inverted stringer
6.06.03	knowledge of building code requirements
6.06.04	ability to establish location
6.06.05	ability to install stair formwork
6.06.06	ability to calculate rise, run and headroom

6.06.07	ability to brace, plumb and align stair forms
6.06.08	ability to shore stair formwork
6.06.09	ability to install components such as chamfer strips and miscellaneous inserts

Sub-task

6.07 Installs embedded steel.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.07.01	knowledge of placing procedures
6.07.02	knowledge of accessories such as chairs, stirrups and sleeves
6.07.03	knowledge of grouting and epoxies
6.07.04	ability to install anchor bolts
6.07.05	ability to cut and bend reinforcing steel
6.07.06	ability to place welded wired mesh (WWM)
6.07.07	ability to place reinforcing steel
6.07.08	ability to place inserts such as angle iron and structural plates

Sub-task

6.08 Dismantles/maintains formwork.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

6.08.01	knowledge of stripping techniques
6.08.02	knowledge of concrete strengths
6.08.03	knowledge of rigging equipment

6.08.04	knowledge of hazards associated with dismantling of formwork
6.08.05	ability to apply form release agents
6.08.06	ability to strip forms
6.08.07	ability to clean forms
6.08.08	ability to re-shore
6.08.09	ability to store formwork

Task 7 Places and cures concrete.

Related Components: Concrete, lightweight concrete, hollow core slab, pre-cast, backer rod, caulking, grout, epoxies, steel shims, braces, anchors, accelerators, hardeners, plasticizers, retarders, air entrainment, miscellaneous inserts, form release agents, reinforcing additives (fibre and steel).

Tools and Equipment: Standard tool kit, standard safety equipment, rigging equipment, ladders, chutes, concrete pumps, hopper, wheelbarrow, rakes, shovels, power trowels, plumb bobs, layout instruments, concrete drill/bits, vibrators, screed, hand float, bull float, edgers, pry bars, finish trowel, jacks, concrete saw, cut-off saw, insulated blankets, polyethylene sheets, water hose, sprayers, broom, construction heaters, scaffolds, tarps.

Sub-task

7.01 Places concrete. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

7.01.01	knowledge of types of concrete
7.01.02	knowledge of rate of pour
7.01.03	knowledge of testing procedures for slump and compression
7.01.04	knowledge of additives
7.01.05	knowledge of types of finishes such as broom, stamped and exposed aggregate

7.01.06	knowledge of lateral pressures
7.01.07	knowledge of compressive strength
7.01.08	ability to position pump trucks and conveyors
7.01.09	ability to inspect formwork prior to placement of concrete
7.01.10	ability to consolidate concrete
7.01.11	ability to mix/batch concrete
7.01.12	ability to pour concrete
7.01.13	ability to recognize signs of form failure
7.01.14	ability to construct and install joints such as expansion, isolation and control joints
7.01.15	ability to finish concrete by screeding and floating

Sub-task

7.02 Cures concrete.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

7.02.01	knowledge of hot and cold weather curing techniques such as ponding and insulating
7.02.02	knowledge of climate protection techniques such as hoarding and heating
7.02.03	knowledge of effects of climatic conditions
7.02.04	ability to control rate of cure
7.02.05	ability to apply curing compound, sealers and release agents

Sub-task

7.03 Installs pre-cast components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	no	NV

7.03.01	knowledge of types of pre-cast systems
7.03.02	knowledge of pre-stress concrete
7.03.03	knowledge of layout procedures
7.03.04	ability to organize sequence of work
7.03.05	ability to align and brace components
7.03.06	ability to install isolation joints
7.03.07	ability to establish elevations
7.03.08	ability to secure components

Sub-task

7.04 Installs grout. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	no	NV

7.04.01	knowledge of types of grout such as drypack and liquid grout
7.04.02	knowledge of types of grouting procedures
7.04.03	knowledge of grout additives
7.04.04	ability to construct and install grout forms
7.04.05	ability to place grout

BLOCK C

FRAMING

Trends: *Increased use of manufactured (engineered) materials, pre-fabricated components and modular systems. Increase in the use of lightweight steel framing systems. Increased awareness of seismic events, extreme weather conditions and waste reduction.*

Task 8 Performs layout.

Related Components:	(Wall systems)	Plates, studs, blocking, furring/strapping, bracing, back framing, lintels, tracks, stiffeners, fire stops;
	(Floor systems)	Floor joists, headers, trimmers, beams, bridging, blocking, columns;
	(Roof/ceiling systems)	Rafters, ridge board, collar ties, trusses, gable studs, fascias, ceiling joists, gussets, blocking, attic access, dormers, bracing, flush beams, joist hangers, strapping.

Tools and Equipment: Standard tool kit, standard safety equipment, squares, marking device, level, calculator, plumb bob, laser level, sliding T-bevel, theodolites.

Sub-task

8.01 Lays out floor systems. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.01.01	knowledge of types of floor systems
8.01.02	knowledge of manufacturers' specifications
8.01.03	knowledge of beam supports such as steel and wood
8.01.04	knowledge of types of beams such as steel, built-up and engineered
8.01.05	knowledge of load bearing requirements

8.01.06	knowedge of special connectors and supports such as joist hangers
8.01.07	knowledge of components such as blocking, backing and bridging
8.01.08	ability to lay out joist locations and floor openings such as stairwells and chases
8.01.09	ability to perform calculations to determine measurements such as area and span requirements for joists and beams
8.01.10	ability to select materials

Sub-task

8.02 Lays out wall systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

8.02.01	knowledge of types of wall systems such as strapped and double-wall
8.02.02	knowledge of materials used in wall systems
8.02.03	knowledge of door and window clearances
8.02.04	knowledge of marking techniques
8.02.05	knowledge of blocking, backing and back framing requirements
8.02.06	ability to perform calculations to determine measurements such as lintel sizes, length of wall, height of wall and location of openings
8.02.07	knowledge of energy efficient construction
8.02.08	ability to lay out stud locations and wall openings
8.02.09	ability to select materials
8.02.10	ability to sequence layout of walls

Sub-task

8.03 Lays out roof and ceiling systems.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Supporting Knowledge & Abilities

8.03.01	knowledge of types of roof and ceiling systems
8.03.02	knowledge of types of roof members such as trusses and valley rafters
8.03.03	knowledge of types of ceiling members such as flush beams and ceiling joists
8.03.04	knowledge of framing requirements for openings
8.03.05	ability to perform calculations to determine measurements such as slope and rafter length
8.03.06	ability to select materials
8.03.07	ability to lay out rafters, trusses and roof openings

Task 9 Constructs framing systems.

Related Components:	(Wall systems)	Plates, studs, structural insulated panel systems (SIPS), blocking, bracing, back framing, furring/strapping, sheathing, lintels, jacks, tracks, stiffeners, fire stops, post and beam components and connectors;
	(Floor systems)	Sill plates, floor joists, joist headers/trimmers, beams, bridging, I-joists, trusses, sheathing, blocking, columns, joist hangers;
	(Roof/ceiling systems)	Rafters, ridge board, structural insulated panel systems (SIPS), collar ties, attic access, dormers, bracing sheathing, trusses, fascias, roof joists, ceiling joists, flush beams, joist hangers, strapping, gussets, webs, blocking, saddles/crickets, scuppers, parapet walls;

(General) Fastening devices (screws, glue, anchor bolts), tie-down clips (hurricane clips), air/weather and vapour barrier, insulation.

Tools and Equipment: Standard tool kit, standard safety equipment, circular saw, reciprocating saw, table saw, radial arm saw, mitre saw, chain saw, metal cutoff saw, hack saw, pinch bar, sledge hammer, layout instruments, electric drill, powder actuated tools, pneumatic tools, screw gun, crimper, wall jacks, step ladders, extension ladders, scaffolds.

Sub-task

9.01 Constructs floor systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.01.01	knowledge of types of beams and joists
9.01.02	knowledge of notching and drilling requirements
9.01.03	ability to select material
9.01.04	ability to place material such as crown up
9.01.05	ability to install fastening devices such as joist hangers, anchor bolts and connectors
9.01.06	ability to install joists, beams and headers
9.01.07	ability to square floor system
9.01.08	ability to install components such as blocking, backing and bridging
9.01.09	ability to install floor sheathing

Sub-task

9.02 Constructs wall systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.02.01	knowledge of types of wall systems such as platform, balloon, timber, steel and panel

9.02.02	knowledge of preserved wood foundations
9.02.03	knowledge of notching and drilling requirements
9.02.04	ability to select material
9.02.05	ability to determine rough openings
9.02.06	ability to place material such as crown up
9.02.07	ability to install fastening devices
9.02.08	ability to use rigging and hoisting equipment
9.02.09	ability to sequence erection of walls
9.02.10	ability to erect walls
9.02.11	ability to square walls
9.02.12	ability to install components such as studs, lintels, blocking, backing, back framing and fire stops as required
9.02.13	ability to install wall sheathing
9.02.14	ability to align, plumb and brace walls

Sub-task

9.03 Constructs roof and ceiling systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

9.03.01	knowledge of types of roof systems such as truss and rafter roofs
9.03.02	ability to select material
9.03.03	ability to place material such as crown up
9.03.04	ability to install fastening devices
9.03.05	ability to cut compound angles

9.03.06	ability to install roof components such as rafters, trusses, ridge blocking, strapping and bracing
9.03.07	ability to install ceiling components such as ceiling joists and strapping
9.03.08	ability to align, plumb and brace roofing members
9.03.09	ability to install roof sheathing
9.03.10	ability to install temporary bracing during erection of roof trusses
9.03.11	ability to install gable, hip, intersecting and unequal slope roof components

BLOCK D

EXTERIOR FINISH

Trends: *Increased use of rain screen technologies. More emphasis on the integrity of building envelopes, both in new and renovated buildings. Increased use of Exterior Insulated Finishing System (EIFS).*

Task 10 Installs exterior doors and windows.

Related Components: Overhead doors, sliding doors, swinging doors, weather stripping, hinges, closers, electronic sensors, window operators, locksets, thresholds, emergency exit devices, protection plates, door stops, kick plates, astragal, handicap access devices, fixed windows, double-hung windows, casement windows, awning windows, hopper windows, sliding windows, pivoting windows, flush bolts, templates, insulation (backer rod, expanding foam, batt), sealants.

Tools and Equipment: Standard tool kit, standard safety equipment, router, drill, mortise machine, bits, circular saw, taps, Allen wrenches, screw gun, templates, jigs, electric hand planer, pop rivet gun, belt sander, pry bar.

Sub-task

10.01 Installs exterior jambs/frames.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

10.01.01	knowledge of types of window and door jambs/frames
10.01.02	ability to construct jambs/frames
10.01.03	ability to install blocking and backing
10.01.04	ability to interpret window and door schedule
10.01.05	ability to verify rough openings
10.01.06	ability to fasten jambs/frames plumb, level and square
10.01.07	ability to insulate cavities around jambs/frames

Sub-task

10.02 Installs exterior doors. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

10.02.01	knowledge of types of doors
10.02.02	knowledge of door components
10.02.03	knowledge of weather protection techniques
10.02.04	ability to interpret door schedule
10.02.05	ability to determine door swing
10.02.06	ability to prepare doors for installation
10.02.07	ability to select and place exterior doors
10.02.08	ability to install overhead doors
10.02.09	ability to adjust exterior doors

Sub-task

10.03 Installs exterior windows. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

10.03.01	knowledge of types of windows
10.03.02	knowledge of window components
10.03.03	knowledge of weather protection techniques
10.03.04	ability to interpret window schedule
10.03.05	ability to select, place and fasten windows
10.03.06	ability to adjust windows

Sub-task

10.04 Installs exterior door and window hardware.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

10.04.01	knowledge of types and styles of hardware
10.04.02	ability to interpret hardware schedule
10.04.03	ability to select hardware
10.04.04	ability to use templates
10.04.05	ability to use specialized tools such as mortising jigs, hinge gain templates and taps
10.04.06	ability to prepare door to receive hardware such as steel doors and fire rated doors
10.04.07	ability to position and fasten door and window hardware
10.04.08	ability to adjust hardware

Task 11 Installs roofing.

Related Components: Eave protection, felt paper, flashing, insulation, caulking, ventilation, strapping, furring, cant strip, drip edge, tar paper, saddles/crickets, soffit baffles, low slope roofing, panel systems, membrane systems, metal roof, shingles (asphalt, metal, wood), scuppers, parapet walls.

Tools and Equipment: Standard tool kit, standard safety equipment, tin snips, hack saw, pry bars, caulking gun, broom, roof jacks, ladders, ladder jacks, pump jack, scaffolding, ladder hoist, gin wheel, compressor, air nailer, circular saw, screw gun, drill, electric shears, torches, grinder, reciprocating saw.

Sub-task

11.01 Installs roof coverings. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.01.01	knowledge of types of roofing materials such as asphalt, wood and metal
11.01.02	knowledge of roofing installation procedures
11.01.03	ability to place and fasten roof coverings
11.01.04	ability to inspect and repair roof coverings
11.01.05	ability to use temporary roof platforms

Sub-task

11.02 Installs roofing components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

11.02.01	knowledge of types of components such as vents, flashing and underlayments
11.02.02	knowledge of roof venting requirements
11.02.03	knowledge of components' application
11.02.04	knowledge of sequence of installation
11.02.05	ability to prepare roof surface
11.02.06	ability to select and install flashing
11.02.07	ability to select and install auxiliary materials such as caulking and bitumen

Task 12 Finishes exterior walls and cornices.

Related Components: Eaves, vents, parapet wall, flashing, awnings, trim accessories, cladding (metal, wood, vinyl, composite, cementitious), soffits, panelized insulation, extruded polystyrene, shingles, air/weather barriers, soffit venting, fascia, friezeboard, stucco, rain screen.

Tools and Equipment: Standard tool kit, standard safety equipment, ladders, scaffolding, pneumatic tools, tin snips, table saw, circular saw, mitre saw, jigs, power planes, metal break, jigsaw, safety harness, drill, hole saw, chop saw, siding shears.

Sub-task

12.01 Installs exterior wall coverings.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

12.01.01	knowledge of types of cladding such as siding and shingles
12.01.02	knowledge of effects of weather on exterior walls
12.01.03	ability to place and attach exterior wall coverings
12.01.04	ability to install exterior wall flashing
12.01.05	ability to install stucco wire, expanded metal lath and accessories
12.01.06	ability to strap/furr walls

Sub-task

12.02 Installs exterior wall trims.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

12.02.01	knowledge of types of exterior trims
12.02.02	knowledge of sequence of installation

12.02.03	knowledge of installation procedures for exterior claddings
12.02.04	ability to construct different types of cornices
12.02.05	ability to install fascia, soffits and continuous venting
12.02.06	ability to install gutters and downspouts

BLOCK E

INTERIOR FINISH

Trends: *Increased use of recycled materials, prefinished and prefabricated materials, and laminate flooring.*

Task 13 Applies wall/ceiling finishes.

Related Components: Gypsum board, sound (acoustical) panels, cork, fibreglass reinforced panels (FRP), vinyl panels, plywood, solid wood, book match panels, metal panels, ceiling grid, sound baffles, resilient channel, batt insulation, attic insulation baffles, vinyl wall board, aluminium door frames (as they apply to demountable walls), adhesives, screws, nails, anchors, moulding, main T's, cross T's, splines, hat track (furring/resilient channel), carrying channels, tie wire, hanger wire, steel studs, track clips.

Tools and Equipment: Standard tool kit, standard safety equipment, sanders, pneumatic nailer, scaffolding, aviation snips, nippers, screw gun, drill, knives, router, pop rivet gun, circular saw, table saw, jigsaw, scroll saw, keyhole saw, circle cutter, laser level, powder actuated tools, electric planer, drywall T-square, welding equipment.

Sub-task

13.01 Installs gypsum coverings. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.01.01	knowledge of types of gypsum coverings
13.01.02	knowledge of types of wall systems such as shaft wall, fire rated wall and sound wall
13.01.03	knowledge of sequence of installation
13.01.04	knowledge of fire stopping and fire proofing requirements such as 1 hour and 2 hour rating
13.01.05	knowledge of blocking requirements
13.01.06	knowledge of sound proofing methods such as resilient channels, sound batts and baffles
13.01.07	ability to install fasteners

13.01.08	ability to install strapping and furring
13.01.09	ability to cut, place and fasten gypsum board

Sub-task

13.02 Installs panels and tiles. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.02.01	knowledge of types of panels and tiles
13.02.02	knowledge of types of wall/ceiling systems
13.02.03	ability to prepare surfaces
13.02.04	ability to select and install fasteners
13.02.05	ability to lay out wall and ceiling for installation of panels and tiles
13.02.06	ability to install materials in sequence
13.02.07	ability to cut, place and fasten material

Sub-task

13.03 Installs solid wood finishes. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.03.01	knowledge of types of wall/ceiling systems
13.03.02	knowledge of solid wood finishes
13.03.03	knowledge of requirements of other trades
13.03.04	ability to prepare surfaces
13.03.05	ability to select and install fasteners
13.03.06	ability to lay out wall and ceiling for installation of solid wood finishes

13.03.07	ability to install material in sequence
13.03.08	ability to cut, place and fasten material

Sub-task

13.04 Installs suspended ceilings.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.04.01	knowledge of types of suspended ceilings
13.04.02	knowledge of fire rating of types of suspended ceilings
13.04.03	knowledge of bulkheads
13.04.04	ability to use fastening techniques and devices such as anchors and wire
13.04.05	ability to lay out ceiling
13.04.06	ability to use levelling techniques
13.04.07	ability to install material in sequence
13.04.08	ability to cut and fit components

Sub-task

13.05 Installs demountable wall systems.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

13.05.01	knowledge of types of demountable wall systems
13.05.02	knowledge of uses of demountable wall systems
13.05.03	knowledge of manufacturers' specifications

13.05.04	ability to use fastening devices and techniques
13.05.05	ability to install components in sequence
13.05.06	ability to cut, fit and fasten material
13.05.07	ability to align and plumb wall system

Task 14 Installs flooring.

Related Components: Linoleum, vinyl floor, tiles, hardwood flooring, access flooring, laminate flooring, adhesives, screws, nails, trims, underlayment.

Tools and Equipment: Standard tool kit, standard safety equipment, precision tool kit, sanders, roller, nailer, drill, screw gun, trowel, chop saw, jigsaw, mitre saw, table saw, tile cutter, pneumatic tools, scriber, compressor.

Sub-task

14.01 Installs underlayment. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

14.01.01	knowledge of types of underlayment
14.01.02	knowledge of types of floor finishes to be applied on underlayment
14.01.03	knowledge of fastening devices
14.01.04	ability to use fastening devices and adhesives
14.01.05	ability to perform layout
14.01.06	ability to prepare floor surfaces by levelling, sanding and cleaning
14.01.07	ability to cut, fit and fasten materials

Sub-task

14.02 Installs floor coverings. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	yes	yes	yes	yes	yes	no	yes	yes	NV

14.02.01	knowledge of types of floor coverings such as tile, sheet goods, hardwood and laminate
14.02.02	knowledge of surfaces onto which coverings are being installed
14.02.03	ability to use fastening devices and adhesives
14.02.04	ability to perform layout
14.02.05	ability to prepare floor surfaces by levelling, sanding and cleaning
14.02.06	ability to cut, fit and fasten materials
14.02.07	ability to install trims such as caps, transition strips and nosings

Sub-task

14.03 Installs access flooring. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes	NV

14.03.01	knowledge of types of access flooring
14.03.02	knowledge of access flooring components
14.03.03	knowledge of sequence of installation
14.03.04	knowledge of requirements of other trades
14.03.05	ability to use fastening techniques
14.03.06	ability to perform layout
14.03.07	ability to cut, fit and fasten materials
14.03.08	ability to level access flooring

Task 15 Installs interior doors and windows.

Related Components: Tambour doors, sliding doors, swinging doors, pocket doors, bi-fold doors, accordion doors, fixed windows, operating windows, weather stripping, hinges, closers, door coordinators, locksets, thresholds, emergency exit devices, protection plates, door stops, kick plate, astragal, handicap access devices, dead bolts, fire rated doors, escutcheon, mullions, sashes, transom.

Tools and Equipment: Standard tool kit, standard safety equipment, router, drill, bits, circular saw, taps, Allen wrenches, templates, jigs, pop rivet gun, belt sander, pry bar, portable power plane, hand plane, hammer drill.

Sub-task

15.01 Installs interior jambs/frames.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

15.01.01	knowledge of types of window and door jambs/frames
15.01.02	knowledge of installation procedures
15.01.03	ability to install blocking and backing
15.01.04	ability to construct jambs/frames
15.01.05	ability to interpret door and window schedule
15.01.06	ability to verify rough openings
15.01.07	ability to fasten jambs/frames plumb, level and square
15.01.08	ability to insulate cavities around jambs/frames

Sub-task

15.02 Installs interior doors.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Supporting Knowledge & Abilities

15.02.01	knowledge of types of doors such as fire, hollow and louvered doors
15.02.02	knowledge of door components
15.02.03	ability to interpret door schedule
15.02.04	ability to determine door swing
15.02.05	ability to prepare doors for installation
15.02.06	ability to select and place interior doors
15.02.07	ability to adjust interior doors

Sub-task

15.03 Installs interior windows.

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

Supporting Knowledge & Abilities

15.03.01	knowledge of glazing systems
15.03.02	knowledge of types of windows
15.03.03	knowledge of window components
15.03.04	ability to interpret window schedule
15.03.05	ability to select, place and fasten windows
15.03.06	ability to adjust windows

Sub-task

15.04 Installs interior door and window hardware.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

15.04.01	knowledge of types and styles of hardware
15.04.02	ability to interpret hardware schedule
15.04.03	ability to select hardware
15.04.04	ability to use templates
15.04.05	ability to use specialized tools such as mortising jigs, hinge gain templates and taps
15.04.06	ability to prepare door to receive hardware such as steel doors and fire rated doors
15.04.07	ability to position and fasten door and window hardware
15.04.08	ability to adjust hardware

Task 16 Constructs stairs.

Related Components: Risers, treads, stringers, wedges, balustrades, skirt boards.

Tools and Equipment: Standard tool kit, standard safety equipment, precision tool kit, circular saw, table saw, compressor, pneumatic nailer, electric drill, generator, screw gun, templates, jigs, jigsaw, powder actuated tool, router, stapler, mitre saw, dividers, trammel points, storey pole, framing square, stair gauges, glue, screws.

Sub-task

16.01 Lays out stairs.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

16.01.01	knowledge of types of stairs

16.01.02	knowledge of marking techniques
16.01.03	ability to perform calculations to determine measurements such as rise, run and allowable headroom
16.01.04	ability to select materials for stringers

Sub-task

16.02 Constructs straight stairs. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

16.02.01	knowledge of stair geometry
16.02.02	knowledge of stair components such as glue blocks, wedges and handrails
16.02.03	knowledge of building code requirements
16.02.04	ability to select and install material
16.02.05	ability to select and install fasteners
16.02.06	ability to select and use adhesives
16.02.07	ability to assemble components such as stringers, treads, risers and skirt boards
16.02.08	ability to install finished components

Sub-task

16.03 Constructs geometric stairs. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

16.03.01	knowledge of types of geometric stairs such as winders, spiral and circular
16.03.02	knowledge of stair geometry

16.03.03	ability to select and install material
16.03.04	ability to select and install fasteners
16.03.05	ability to select and use adhesives
16.03.06	ability to assemble components of geometric stairs such as handrails, newel posts and spindles
16.03.07	ability to install assembled components

Task 17 Constructs finish components.

Related Components: Casing (door and windows), chair rails, shelving, washroom accessories, putty, wood plugs, hinges, mantles, slides, pulls, closers, casework, trim, laminates, biscuits, dowels, adhesives, draw bolts, anchors, valance, washroom partitions, cabinets, counter tops, display cases, grab bars, closet rods, mirrors, blinds, balustrades, hand rails, newel post, half-newel post.

Tools and Equipment: Standard tool kit, standard safety equipment, precision tool kit, portable power tools, hand tools, stationary power tools, pneumatic tools, layout instruments, jigs, drill bits, templates, masking tape.

Sub-task

17.01 Fabricates finish components. **Supporting Knowledge & Abilities**

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

17.01.01	knowledge of boring techniques
17.01.02	knowledge of abrasives and adhesives
17.01.03	knowledge of wood finish requirements such as paint, stain or clear
17.01.04	ability to construct cabinets and millwork
17.01.05	ability to clamp material
17.01.06	ability to construct joints
17.01.07	ability to apply adhesives

17.01.08	ability to construct jigs
17.01.09	ability to select hardware
17.01.10	ability to select fasteners
17.01.11	ability to select materials
17.01.12	ability to assemble pre-fabricated components
17.01.13	ability to prepare for shipping

Sub-task

17.02 Installs finish components/accessories.

Supporting Knowledge & Abilities

NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU
yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	NV

17.02.01	knowledge of types of components/ accessories such as casing, baseboards and balustrades
17.02.02	knowledge of wood finish requirements such as paint, stain or clear
17.02.03	ability to interpret drawings and specifications
17.02.04	ability to scribe
17.02.05	ability to use layout tools and instruments
17.02.06	ability to apply adhesives
17.02.07	ability to apply fillers
17.02.08	ability to align, plumb and level components
17.02.09	ability to select fasteners
17.02.10	ability to cope joints
17.02.11	ability to adjust hardware
17.02.12	ability to install trim such as casing, crown mouldings and chair rails

APPENDICES

TOOLS AND EQUIPMENT

Standard Tool Kit

adjustable wrench
aviation snips
back saw
bench plane
block plane
carpenter's apron
caulking gun
chalk line
cold chisel
concrete bits
cone/tie wrench
cordless drill
dry line
drywall T-square
file
framing square
hack saw
hammers (framing, finishing)
hand level—24" and 48"
hand saws
hatchet
keyhole saw
knives
levels
measuring tape
multi-driver screwdriver
nail puller
nail set
pencil/marking instrument
pipe wrench
pliers and side cutter
plumb bob
pry bars
putty knife
rasp
screwdrivers (Robertson, Phillips, straight)
sliding T-bevel
stapler
utility knife
wood boring bits
wood chisels
wood spade bit set
wrecking bar

Hand Tools

broom
brushes
edgers
finish trowel
hand float
rakes
rollers
scrapers
shovels
siding shears
sledge hammer
string lines
tarps
tin snips
trowels

Precision Tool Kit

Allen wrenches
brad driver
builder's level
butt gauge
circle cutter
clamps
coping saw
dividers
drawing instruments
high speed drill sets

Precision Tool Kit (cont'd)

hinge gain template
hole saw
jigs
laser level
nail sets
pop rivet gun
scale rulers
scriber
scribing compass
set of chisels
socket sets
stair gauges
taps
templates
theodolite
torpedo level
transit

Standard Safety Equipment

breathing apparatus
cutting goggles
dust mask
fall protection
first aid kit
gloves
hard hat
hearing protection
lanyard
reflective vest
rope grab
safety boots
safety glasses and goggles
safety lifeline
welding gloves
welding mask

Portable Power Tools and Portable Equipment

air blowpipe
air compressor
belt sander
biscuit joiner
bull float
calculator
chainsaw
circular saw
compressor
concrete cutting saw
concrete vibrator
construction heaters
cordless drill
core drill and bits
cut-off saw
cut out tools
drywall gun
electric chipping hammer
electric drill
electric shears
extension
extension cords
generator
grinder
hammer drill
hydraulic jacks
igniter
jackhammer
jigsaw
ladders
ladder hoist
ladder jacks
laminate trimmer
metal cut-off saw
mini-grinder
mitre saw
mortise machine
palm sander
planer
pneumatic tools
portable power tool accessories
powder actuated tools
power nailer/fastener
reciprocating saw
roof jack
router and bits
salamander type heater
sander

Portable Power Tools and Portable Equipment (cont'd)

scaffold
screed
sprayers
stapler
step ladders
tiger torch
tile cutter
torches
wall jack
wet/dry vacuum
wheelbarrow

Rigging and Hoisting Equipment

chokers
come-alongs
eyebolts
nylon lifting straps
pinch bar
ropes
skid ramps
tirfors
turnbuckles

Communication Equipment

cell phones
computer
fax machine
personal digital assistant (PDA)
telephone
two-way radios

Motorized Vehicles

articulating boom man lift
boom truck
forklift
scissor lift
skid-steer loaders
suspended access equipment

Stationary Equipment

band saw
disk sander
drill press
dust collection equipment
grinder
jointer
mortiser
radial arm saw
router tabler
shaper
table saw
thickness planer

GLOSSARY

access flooring	a secondary raised floor system that bears on a primary floor, used to create a chase for routing electrical and computer wiring, ventilation ducts, etc.
acclimatization	to make or become used to new climates or new conditions
back framing	the secondary non-structural framing done after the structural framing is completed; includes such items as valances, drop ceilings, chases and boxing for utilities, attic access, backing, etc.
balustrade	railing consisting of a series of balusters connected at the top by a rail
batter boards	boards set at right angles to each other at each corner of an excavation, used to indicate the location and alignment of footing and foundation walls
beam	a main horizontal structural member constructed of wood, steel or concrete used to support secondary vertical loads
block A - Occupational Skills	culmination of repetitive general skills for many tasks performed throughout a project
block B - Concrete	all of the activities which relate to preparing for and placing concrete
block C - Framing	all of the activities which relate to the layout, cutting and assembly of various members to construct walls, floors, roofs and ceilings
block D - Exterior Finish	all of the activities which relate to the finishing of the building exterior, including cladding, soffit, roofing, exterior doors and windows
block E - Interior Finish	all of the activities which relate to the finishing of the interior walls, ceilings, floors, installation of interior trims, cabinets and interior doors and windows
caisson	water tight box or enclosure used for construction work below grade or water level
column	a vertical structural member that supports the weight of other members
construct	to build, pile up, devise, to put together
embedded steel	steel components that are an integral part of concrete structures; this includes reinforcing steel, anchor bolts, angle iron and miscellaneous hardware
falsework	the structural supports and the necessary bracing required for the support of temporary loads during construction

flooring	material used in the construction of floors where the surface material is known as finish flooring, while the base material is called sub-flooring
footing	supporting element at the base or bottom of a foundation wall, pier or column used to distribute weight
formwork	temporary structures constructed to the shape of the finished structural member, to support freshly poured concrete
foundation	the lower part that rests on and extends into the ground, providing support for the structure above it
geometric stairs	stair systems that include elliptical, curved or spiral stairs
grout	a cementitious or epoxy-based mixture, installed in a plastic state, to fill structural (column base plates) and non-structural voids (tile joints)
header	a joist or rafter that is perpendicular to the trimmer joists or rafters, used to support and frame openings
inspect	to look at closely or to check for deficiencies
install	place in position ready for use
insulated concrete foundations (ICF)	a modular system for forming concrete walls made of insulating foam material (block, panel, plank systems) where the forms typically remain in place as part of the finished structure
insulating	the installation of various materials used to resist heat, sound and cold transmission through walls, floors, ceilings and foundations
joist	one of a series of horizontal members used to support a floor, ceiling or roof
lintel	wood, stone or steel member placed across the top of a rough door or window opening; it supports the weight from above
load bearing wall	a wall that supports primary vertical loads
maintenance	activities required for the proper functioning of power tools such as inspecting, oiling, tensioning of chains or belts, adjusting, dusting air filters, etc.
pier	a foundation which distributes the weight of a column
ponding	a method of curing a concrete slab by flooding its surface with water
powder actuated tool	device that drives fasteners by means of an explosive charge
rafter	one of a series of structural members of a roof designed to support roof loads

rain screen	cavity in an exterior wall constructed to protect the forces of nature (wind, rain, moisture) from penetrating the interior wall cavity to prevent mildew, premature rotting, etc.; rain screens effectively "drain the rain"
rise	vertical measurement
run	horizontal measurement
siding	boards and panels used as an exterior finish wall covering
SIPS	structural insulated panel systems; insulating material sandwiched between two layers of Oriented Strand Board (OSB) prefabricated in a factory
site layout	the initial arranging of primary building components onto the building site via blueprint interpretation and the setting out of batter boards, using layout tools and equipment
stud	one of a series of vertical structural members used as support in walls and partitions
subfloor	boards or sheet material laid on joists under a finished floor
temporary structure	any structure erected during construction that is removed upon completion of the project
tile	thin building material made of cement, plastic or other resilient material used as a finish for walls, floors, ceilings or roofs
trimmer	a framing member used to provide added strength and stiffness around framed openings
welding equipment	all tools, equipment and material required to cut, join metals
yoking	installation of ties or clamping devices around column forms or over the top of wall or footing forms to keep them from spreading because of pressure imposed by concrete placement

BLOCK AND TASK WEIGHTING

BLOCK A OCCUPATIONAL SKILLS

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	10	31	20	19	25	20	18	24	20	20	10	15	NV	19%

Task 1 Uses tools and equipment.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	14	17	15	24	20	30	25	30	30	15	20	25	NV	22%

Task 2 Uses building materials.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	13	17	20	23	20	25	25	15	25	20	20	30	NV	21%

Task 3 Interprets documentation.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	38	23	30	22	20	15	20	30	20	30	20	20	NV	24%

Task 4 Organizes work.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	17	22	25	13	20	10	15	10	15	30	20	15	NV	18%

Task 5 Constructs temporary access structures.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	18	21	10	18	20	20	15	15	10	5	20	10	NV	15%

BLOCK B CONCRETE

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	22	16	30	20	20	20	21	22	20	18	30	10	NV	21%

Task 6 Constructs formwork.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	67	70	70	59	85	80	70	70	80	75	75	80	NV	73%

Task 7 Places and cures concrete.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	33	30	30	41	15	20	30	30	20	25	25	20	NV	27%

BLOCK C FRAMING

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	30	20	20	26	25	22	23	24	25	24	40	35	NV	26%

Task 8 Performs layout.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	53	50	70	44	50	55	50	60	25	60	50	50	NV	51%

Task 9 Constructs framing systems.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	47	50	30	56	50	45	50	40	75	40	50	50	NV	49%

BLOCK D EXTERIOR FINISH

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	18	15	20	16	15	18	17	10	15	19	10	20	NV	16%

Task 10 Installs exterior doors and windows.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	37	33	20	40	40	38	35	40	25	60	30	25	NV	35%

Task 11 Installs roofing.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	23	31	40	32	30	20	30	40	35	5	40	25	NV	29%

Task 12 Finishes exterior walls and cornices.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	40	36	40	28	30	42	35	20	40	35	30	50	NV	36%

BLOCK E INTERIOR FINISH

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	National Average
%	20	18	10	19	15	20	21	20	20	19	10	20	NV	18%

Task 13 Applies wall/ceiling finishes.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	18	17	20	15	15	25	15	25	20	8	15	20	NV	18%

Task 14 Installs flooring.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	12	16	10	13	20	10	10	10	10	2	15	12	NV	12%

Task 15 Installs interior doors and windows.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	18	19	20	20	25	20	25	15	25	25	10	23	NV	20%

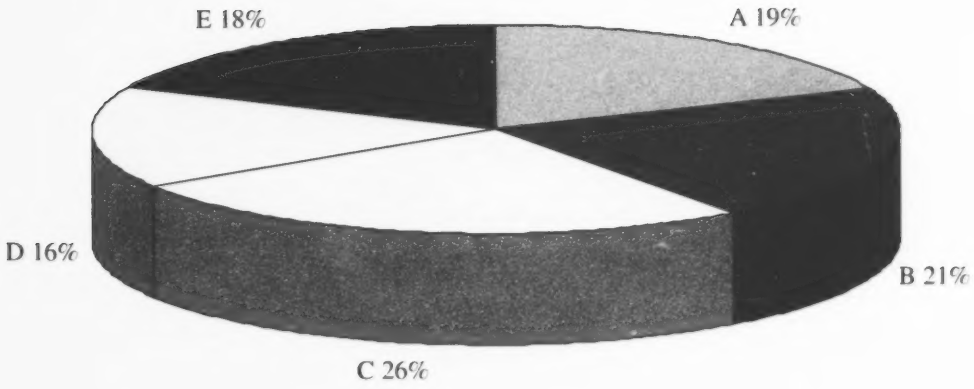
Task 16 Constructs stairs.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	30	26	10	31	25	20	15	20	25	35	40	25	NV	25%

Task 17 Constructs finish components.

	NL	NS	PE	NB	QC	ON	MB	SK	AB	BC	NT	YT	NU	
%	22	22	40	21	15	25	35	30	20	30	20	20	NV	25%

PIE CHART*



TITLES OF BLOCKS

Block A	Occupational Skills	Block D	Exterior Finish
Block B	Concrete	Block E	Interior Finish
Block C	Framing		

* Average percentage of the total number of questions on an interprovincial examination, assigned to assess each block of the analysis, as derived from the collective input from workers within the occupation from all areas of Canada. Interprovincial examinations typically have from 100 to 150 multiple-choice questions.

TASK PROFILE CHART-CARPENTER (2005)

BLOCKS	TASKS	SUB-TASKS					
A OCCUPATIONAL SKILLS	**1. Uses tools and equipment.**	1.01 Uses hand tools.	1.02 Uses portable power tools.	1.03 Uses stationary power tools.	1.04 Uses powder actuated tools.	1.05 Uses pneumatic tools.	1.06 Uses rigging and hoisting equipment.
		1.07 Uses layout instruments.	1.08 Uses tack welding equipment. **(NOT COMMON CORE)**	1.09 Uses torch cutting equipment. **(NOT COMMON CORE)**	1.10 Uses personal protective equipment (PPE).		
	2. Uses building materials.	2.01 Selects materials.	2.02 Handles materials.	2.03 Installs fasteners, adhesives and connectors.	2.04 Installs membranes and sealants.	2.05 Installs foundation protection.	2.06 Installs insulating materials.
	3. Interprets documentation.	3.01 Interprets blueprints.	3.02 Interprets specifications.	3.03 Applies building codes.	3.04 Interprets safety and workplace documentation.		
	4. Organizes work.	4.01 Performs site layout.	4.02 Estimates materials.	4.03 Communicates with others.	4.04 Schedules work sequence.	4.05 Maintains safe work environment.	4.06 Performs site preparation.
	5. Constructs temporary access structures.	5.01 Installs scaffolding.	5.02 Builds ladders, ramps and temporary stairs.				
B CONCRETE	**6. Constructs formwork.**	6.01 Erects shoring.	6.02 Constructs footing forms.	6.03 Constructs wall and grade beam formwork.	6.04 Constructs slab formwork.	6.05 Constructs column formwork.	6.06 Constructs stair formwork.
		6.07 Installs embedded steel.	6.08 Dismantles/ maintains formwork.				
	7. Places and cures concrete.	7.01 Places concrete.	7.02 Cures concrete.	7.03 Installs pre-cast components.	7.04 Installs grout.		

CARPENTER (2005)

BLOCKS	TASKS	SUB-TASKS				
C FRAMING	8. Performs layout.	8.01 Lays out floor systems.	8.02 Lays out wall systems.	8.03 Lays out roof and ceiling systems.		
	9. Constructs framing systems.	9.01 Constructs floor systems.	9.02 Constructs wall systems.	9.03 Constructs roof and ceiling systems.		
D EXTERIOR FINISH	10. Installs exterior doors and windows.	10.01 Installs exterior jambs/frames.	10.02 Installs exterior doors.	10.03 Installs exterior windows.	10.04 Installs exterior door and window hardware.	
	11. Installs roofing.	11.01 Installs roof coverings.	11.02 Installs roofing components.			
	12. Finishes exterior walls and cornices.	12.01 Installs exterior wall coverings.	12.02 Installs exterior wall trims.			
E INTERIOR FINISH	13. Applies wall/ceiling finishes.	13.01 Installs gypsum coverings.	13.02 Installs panels and tiles.	13.03 Installs solid wood finishes.	13.04 Installs suspended ceilings.	13.05 Installs demountable wall systems.
	14. Installs flooring.	14.01 Installs underlayment.	14.02 Installs floor coverings.	14.03 Installs access flooring.		
	15. Installs interior doors and windows.	15.01 Installs interior jambs/frames.	15.02 Installs interior doors.	15.03 Installs interior windows.	15.04 Installs interior door and window hardware.	

BLOCKS	TASKS	SUB-TASKS		
	16. Constructs stairs.	16.01 Lays out stairs.	16.02 Constructs straight stairs.	16.03 Constructs geometric stairs.
	17. Constructs finish components.	17.01 Fabricates finish components.	17.02 Installs finish components/ accessories.	